US Army Wide Tele-TBI Projects

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USA Medical Research and Materiel Command (MRMC)

Why Do we Need to Address TBI?

- Signature Injury (59% of WRAMC OIF/OEF pts)
- Civilian population 1.4 M suffer a TBI per year
- Paucity of sound clinical research evidence
- Lasting quality of life effects

Why Do we Need to Address TBI?

- Hard to diagnose
- How do you assess, diagnose, treat and rehab
- Etiologies not fully understood
- Need to know-Is the Soldier fit to return to the fight?
- Resilience—how can we protect ahead of time

This is Why we are Involved!

US Army Wide Tele-TBI Projects
'Background'

- Request for proposals-mid 2007
- TATRC Proposals submitted Sep 07
- Proposals approved Feb 08
- COAs recommended & approved Mar 08

US Army Wide Tele-TBI Projects
'Three Separate Initiatives'

- RMCs Tele-TBI Infrastructure (personnel + equip)
- mCare Cell Phone Project
- AMEDD Transcranial Doppler Program

US Army Wide Tele-TBI Projects
'RMCs Tele-TBI Infrastructure'

- PHASE I: Mar 08-Present
  - Coordinated with OTSG's HP&S, PTBI, PR&R and DCOE
  - Coordinated with each RMCs' POCs determining requirements
  - Coordinated w/ USAMITC to ascertain network needs and equipment compatibility

US Army Wide Tele-TBI Projects
'RMCs Tele-TBI Infrastructure'

- PHASE I continued:
  - Contracted for RMC management teams
    - (Program Manager, Clinical and Technical Advisor-13 personnel)
  - Deployed management teams and equip
    - One mngt team per RMC and equip at > 60 sites
  - Provided ongoing assistance and guidance w/ RMCs on building their tele-TBI programs

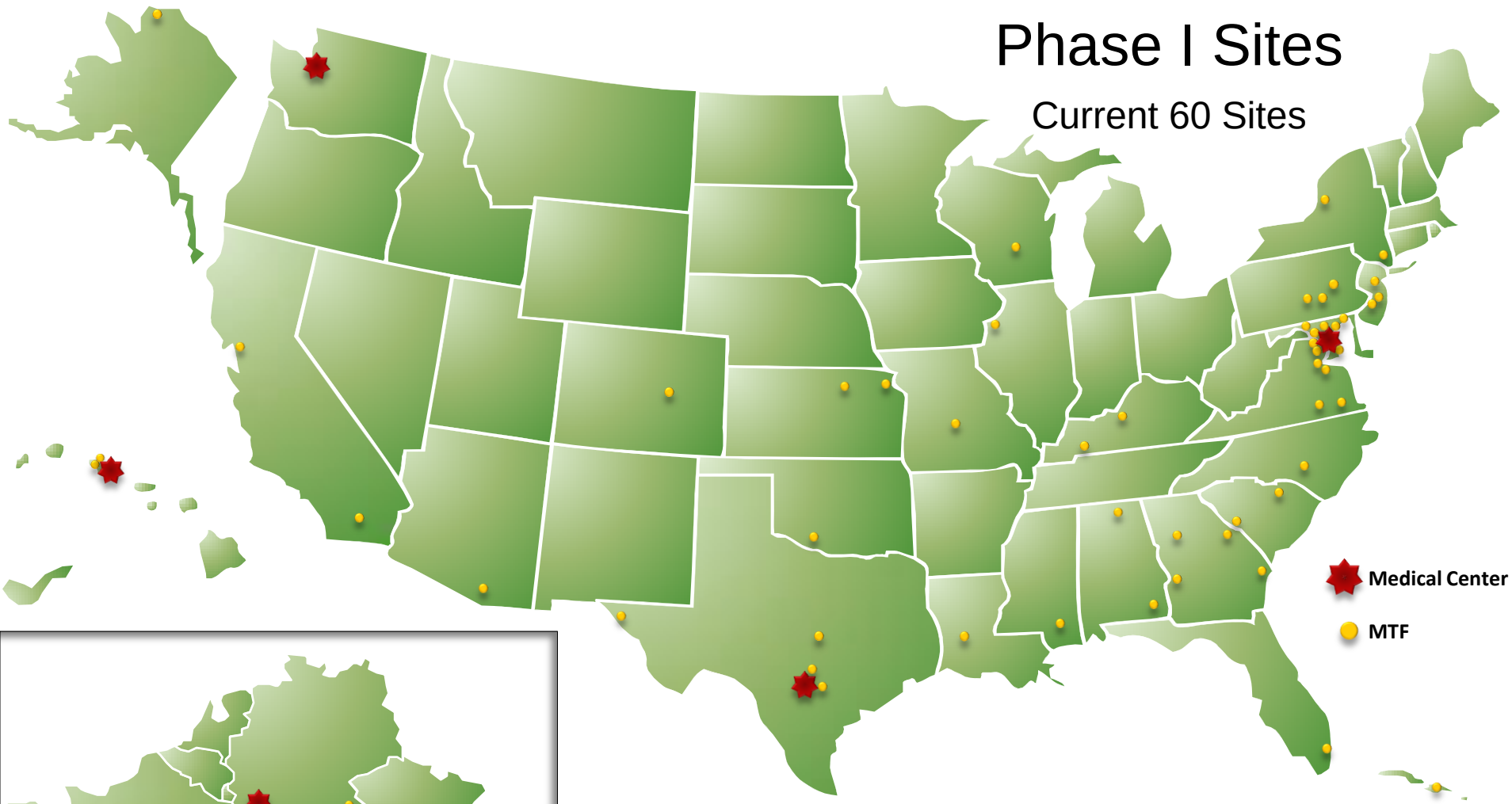
US Army Wide Tele-TBI Projects
'RMCs Tele-TBI Infrastructure'

- PHASE II:(broader tele-health) June 09-Present
  - Submitted contract for additional MTF personnel
    - (technical, clinical and administrative-63 personnel)
  - Will deploy equipment to 78 sites by 2009 end
  - Provided suggestions on how some recent Suicide Prevention Task Force concerns might be addressed by leveraging the tele-tbi infrastructure
  - Co-sponsoring w/ ATA Conference on tele-TBI clinical applications that could be used today


Landstuhl Medical Center, Germany
Europe Regional Medical Command
Madigan Medical Center, Tacoma, WA
Western Regional Medical Command
Great Plains Regional Medical Command
North Atlantic Regional Medical Command
Walter Reed Medical Center WDC
Eisenhower Medical Center, Ft. Gordon, GA
South East Regional Medical Command
Brook Army Medical Center (BAMC) San Antonio, TX
Pacific Regional Medical Command
Honolulu
Tripler Medical Center Ohau, HI
Somoa
Somoa
Ft. Buchanan, Puerto Rico
Western (WRMC) - 6 sites
Southeast (SERMC) - 15+ sites
Great Plains (GPRMC) - 7 sites
European (ERMC) - 13 sites
North Atlantic (NARMC) - 22 sites
Pacific (PRMC) - 4 sites

Phase I Sites

Current 60 Sites



NRMC – 26 (all used)

SERMC – 13 (3 used)

GPRMC –12 (11 used)

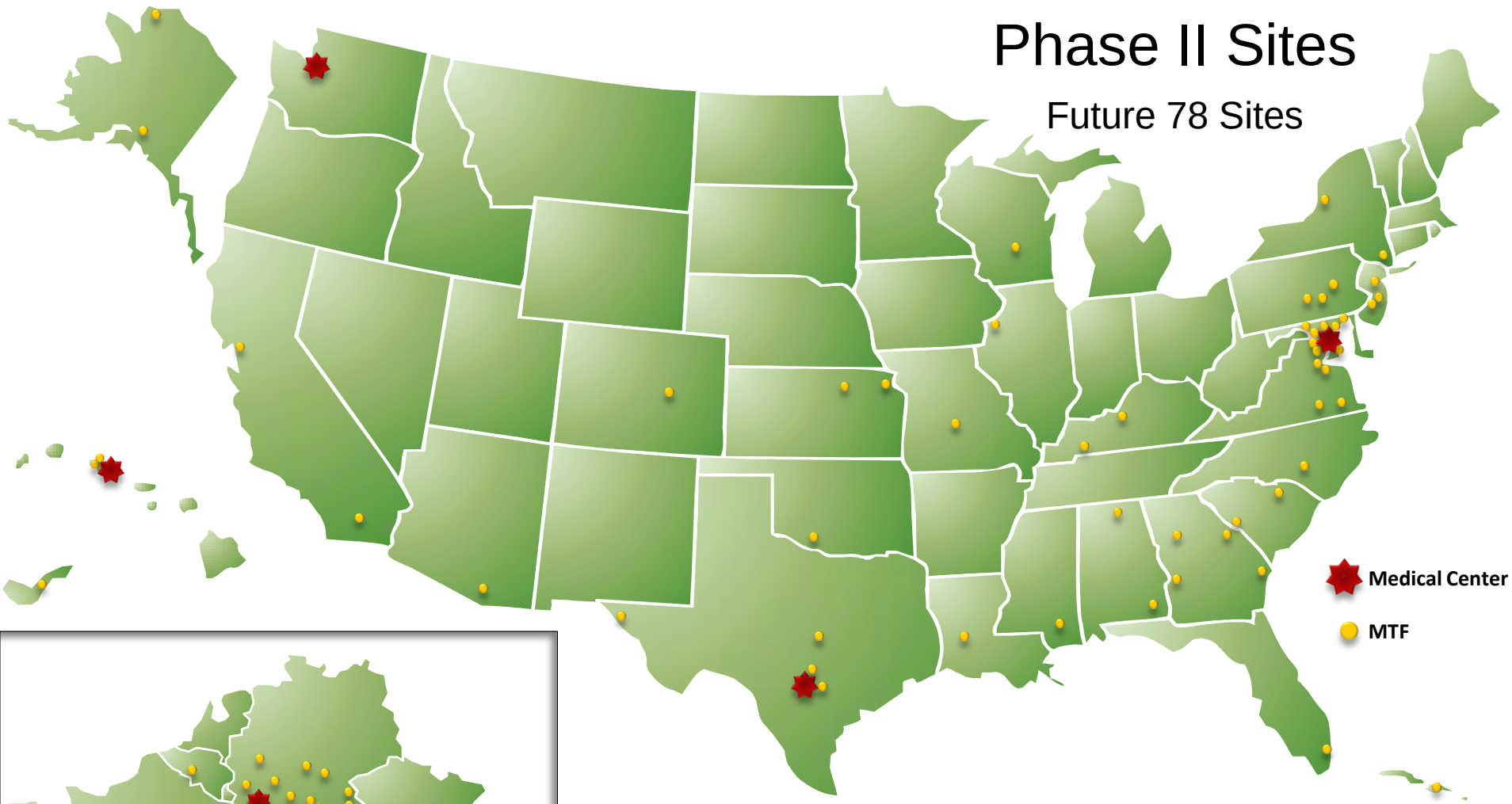
WRMC – 4 (2 used)

PRMC – 3 (0 used)

ERMC – 2 (0 used)

Phase II Sites

Future 78 Sites



NRMC –28 (all projected)

SERMC 14 (all projected)

GPRMC –12 (all projected)

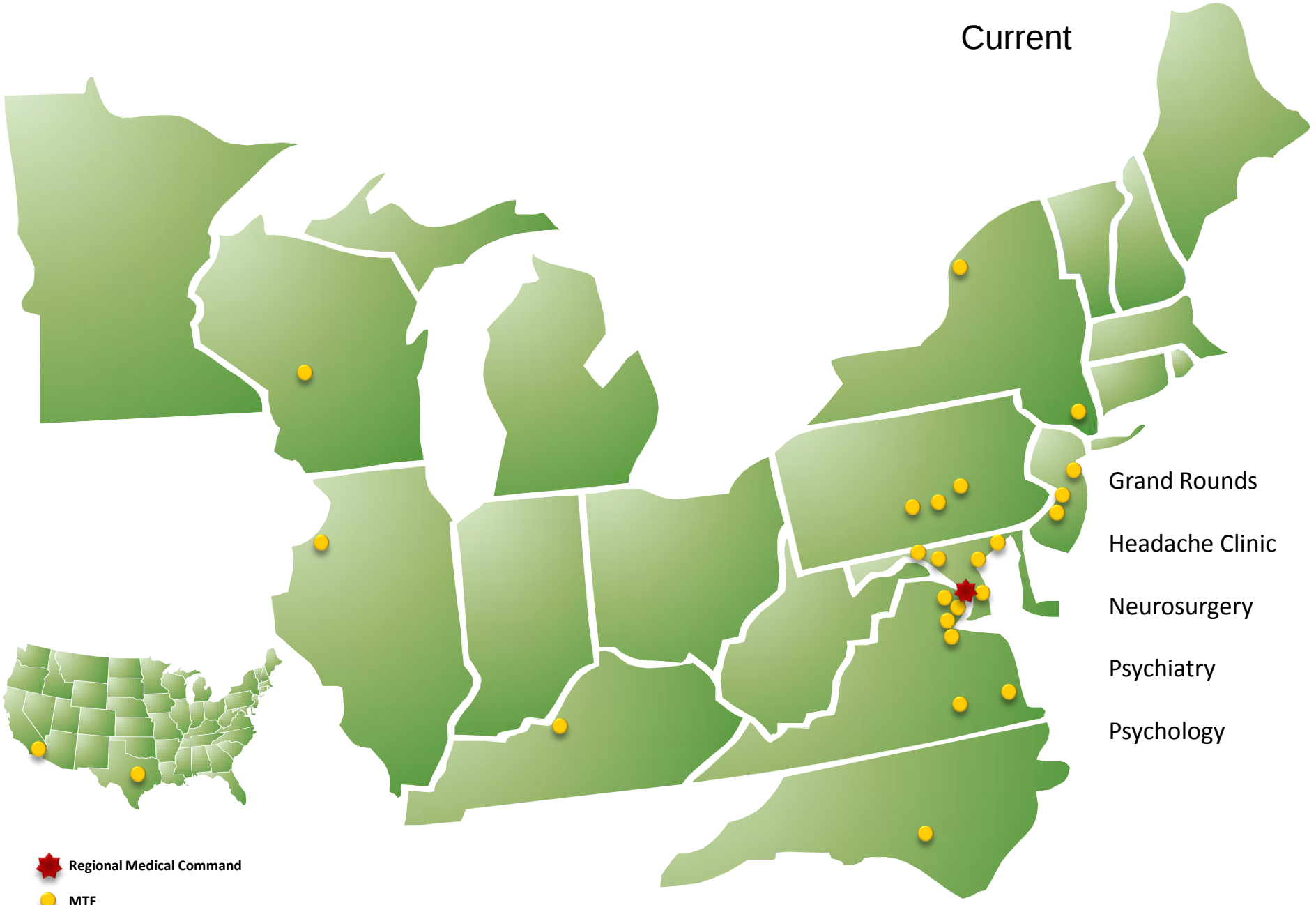
WRMC – 5 (all projected)

PRMC – 4 (all projected)

ERMC – 15 (all projected)

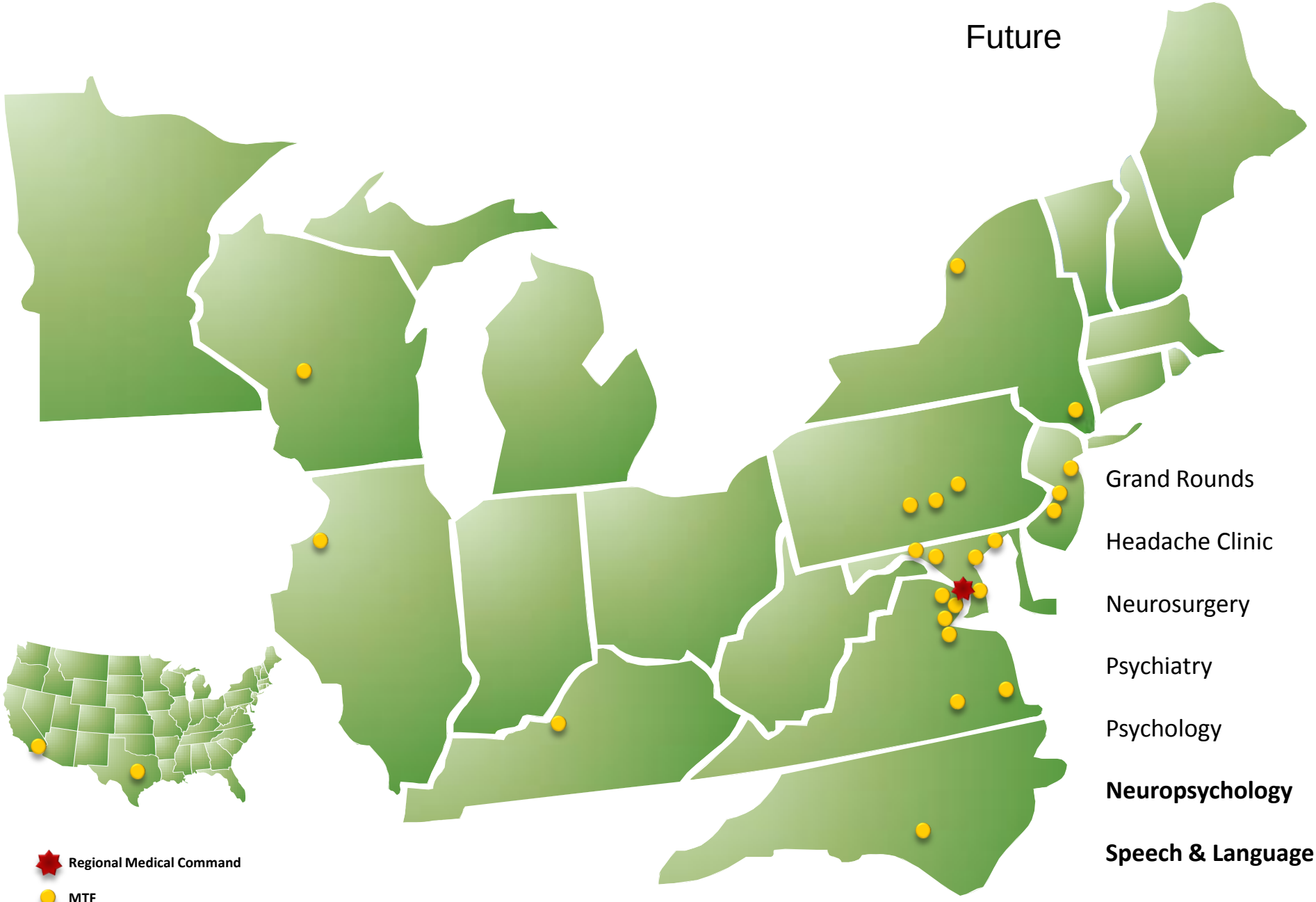
NRMC

Current



NRMC

Future

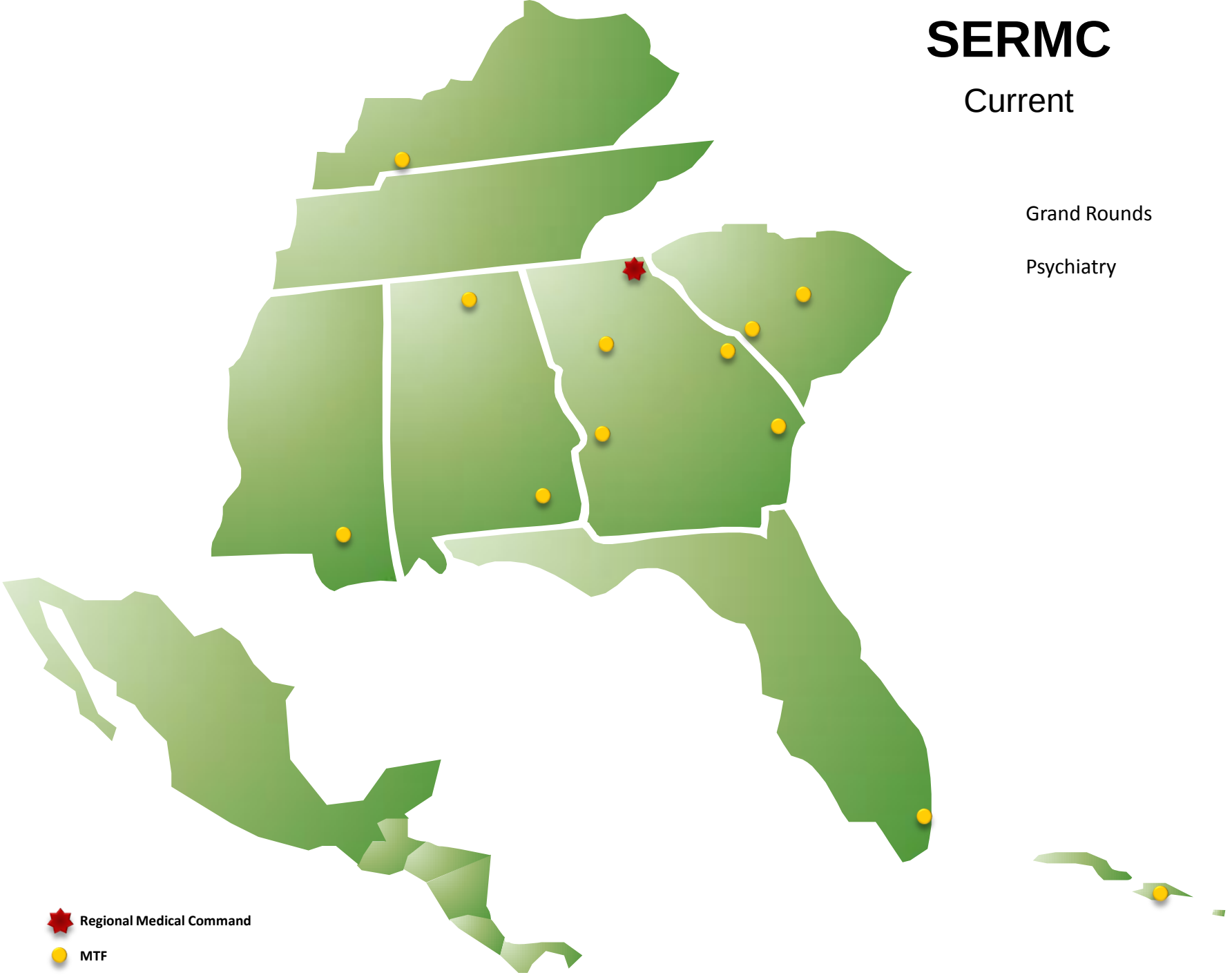

Grand Rounds
Headache Clinic
Neurosurgery
Psychiatry
Psychology
Neuropsychology
Speech & Language
Regional Medical Command
MTF

SERMC

Current

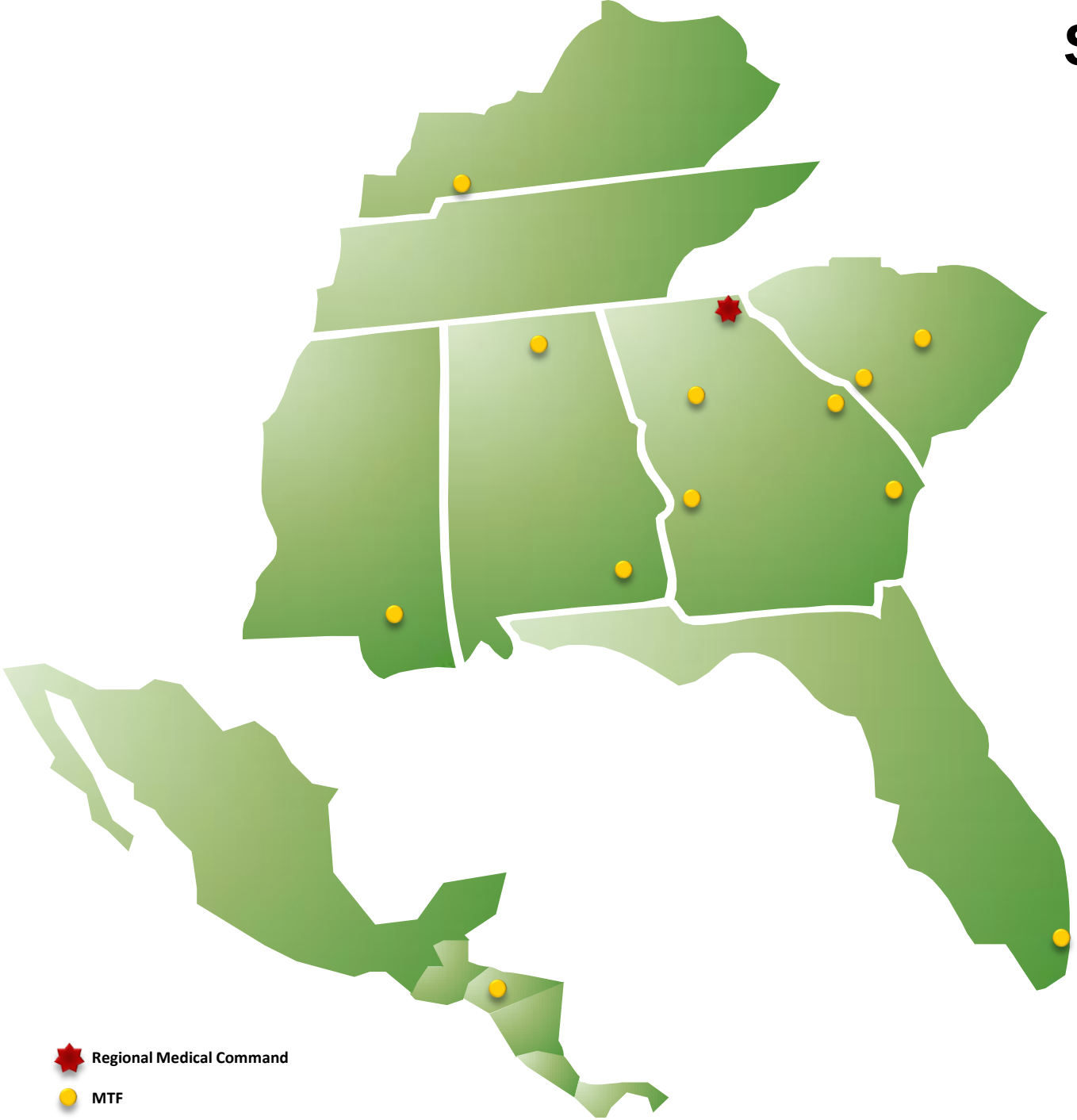
Grand Rounds

Psychiatry



SERMC

Future



Grand Rounds

Psychiatry

In-services / Speaker Series

Neurology

Neuropsychology

Psychology (Psychotherapy)

Psychology Residency Training

Occupational Therapy

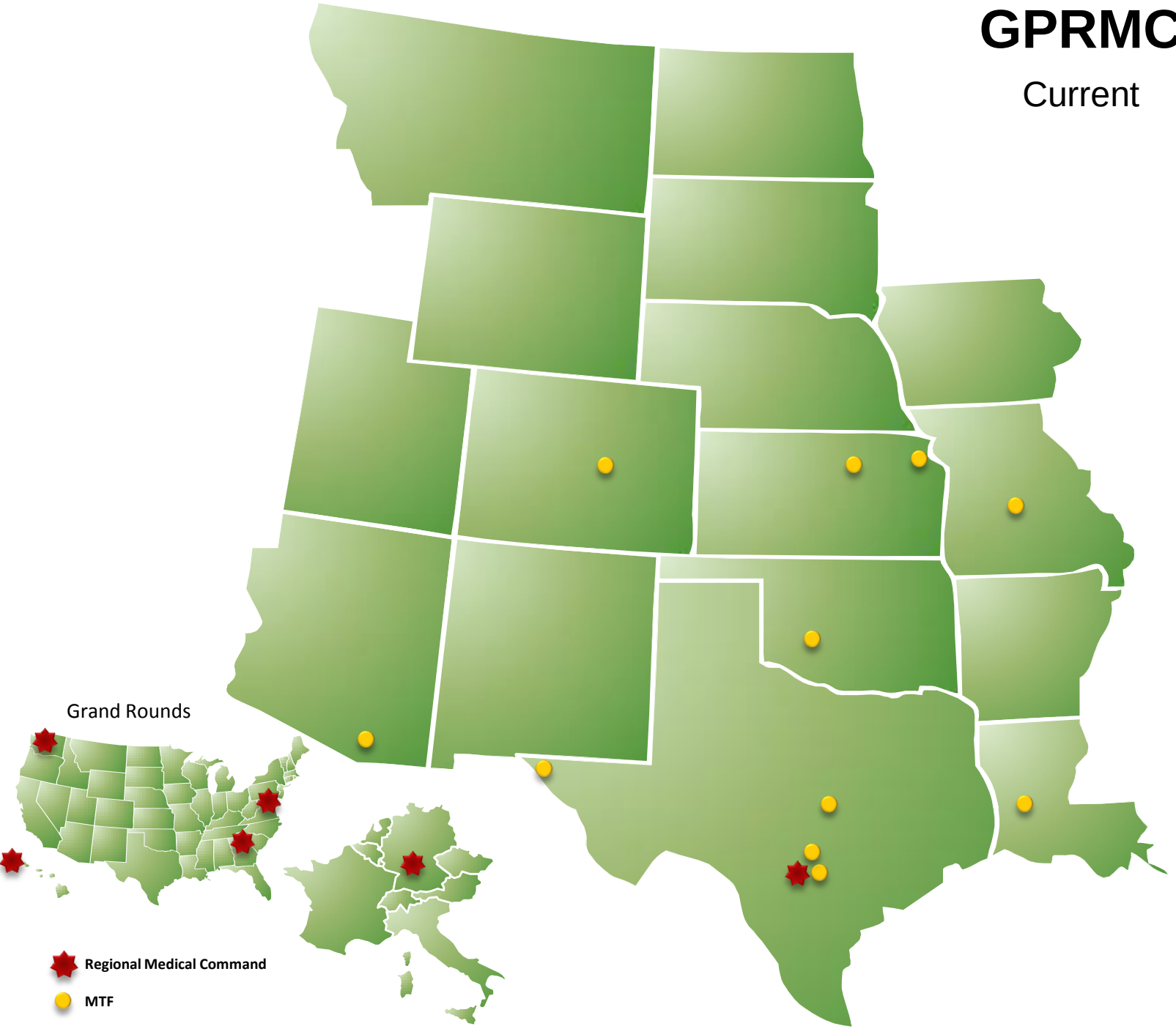
Physical Therapy

Social Work

Speech TBI (Neurology)

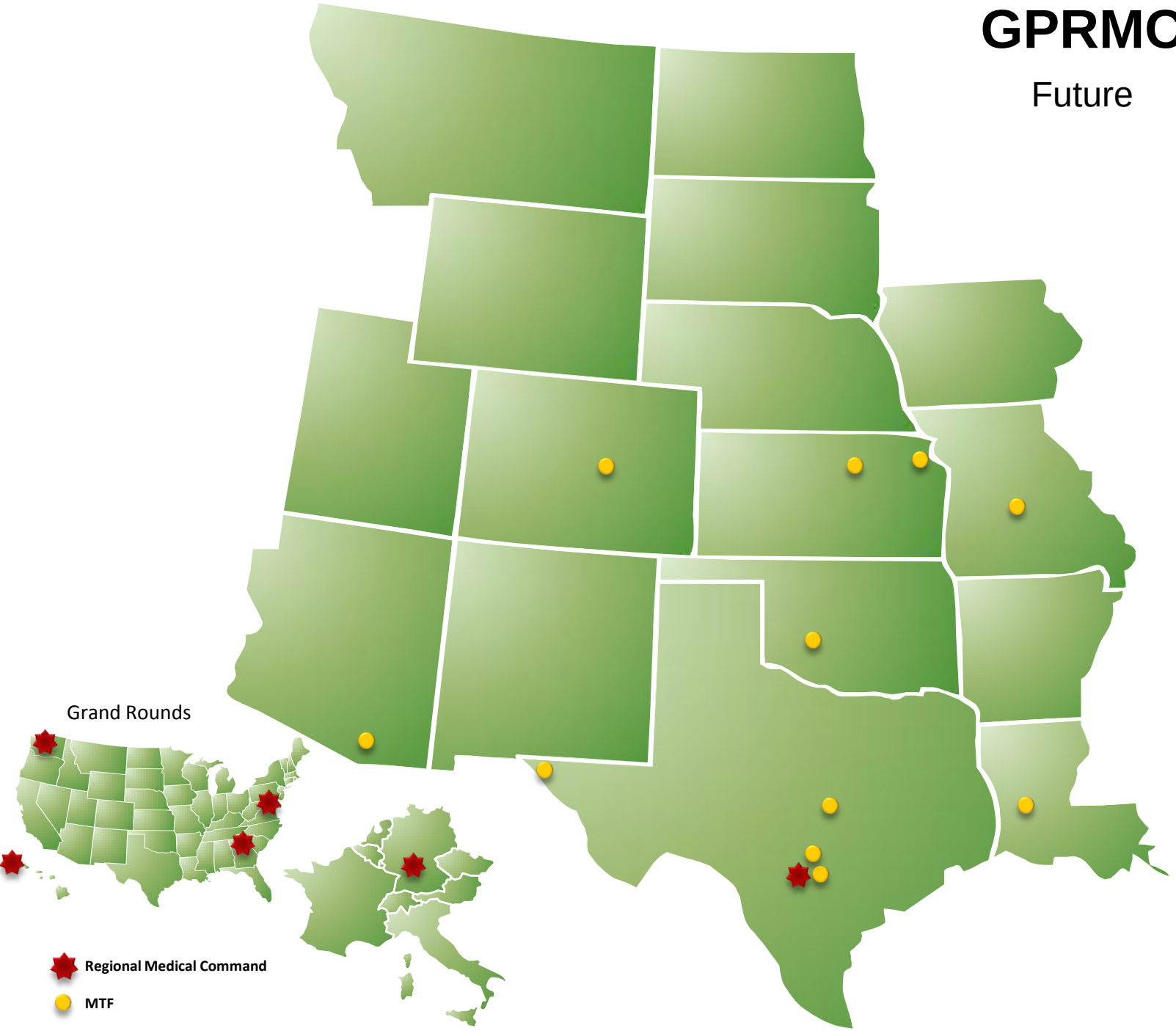
GPRMC

Current



GPRMC

Future



Grand Rounds

Psychology

Neuropsychology

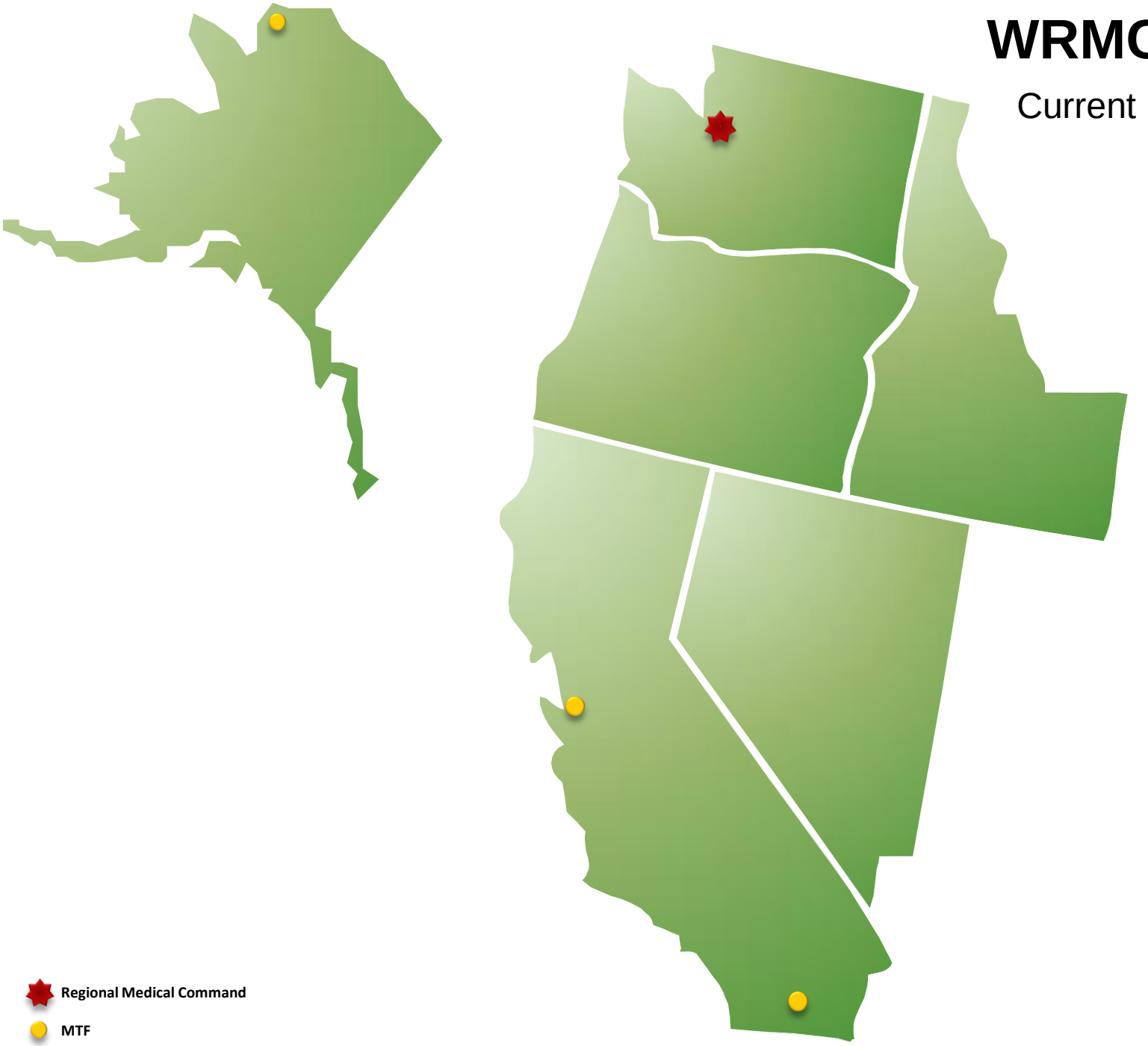
Physical Medicine

Sleep Disorders

Speech & Language

WRMC

Current



Grand Rounds

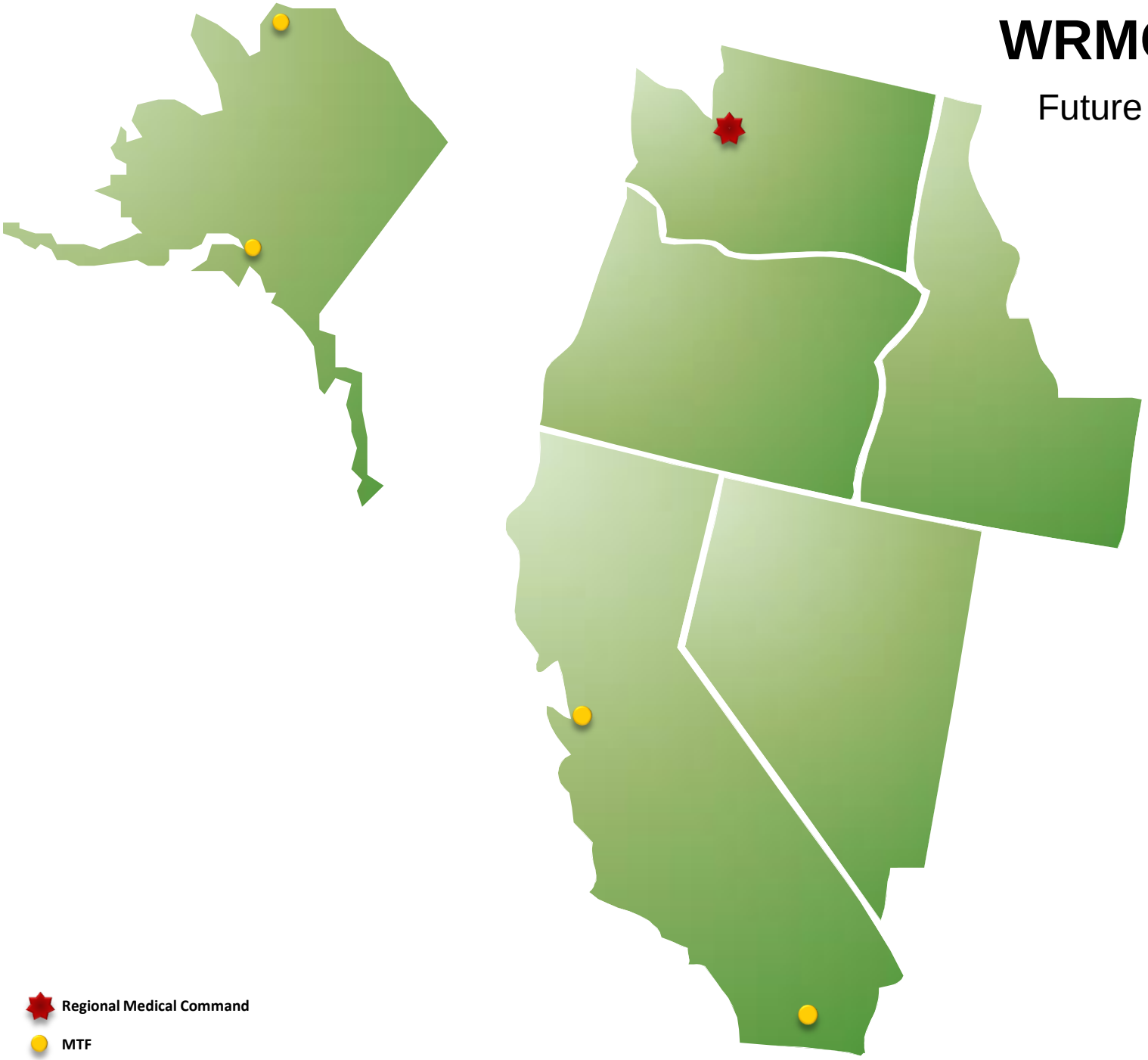
Primary Care

Regional Medical Command

MTF

WRMC

Future



Regional Medical Command

MTF

Grand Rounds

Primary Care

Behavioral Health

Behavioral Neurology

Clinical Psychology

Neurology

Neuropsychology

Neuropsychometry

Occupational Therapy

PRMC

Current

Grand Rounds

Regional Medical Command

MTF

PRMC

Future

Grand Rounds

Audiology

Occupational Therapy

Psychology

Physical Therapy

Speech

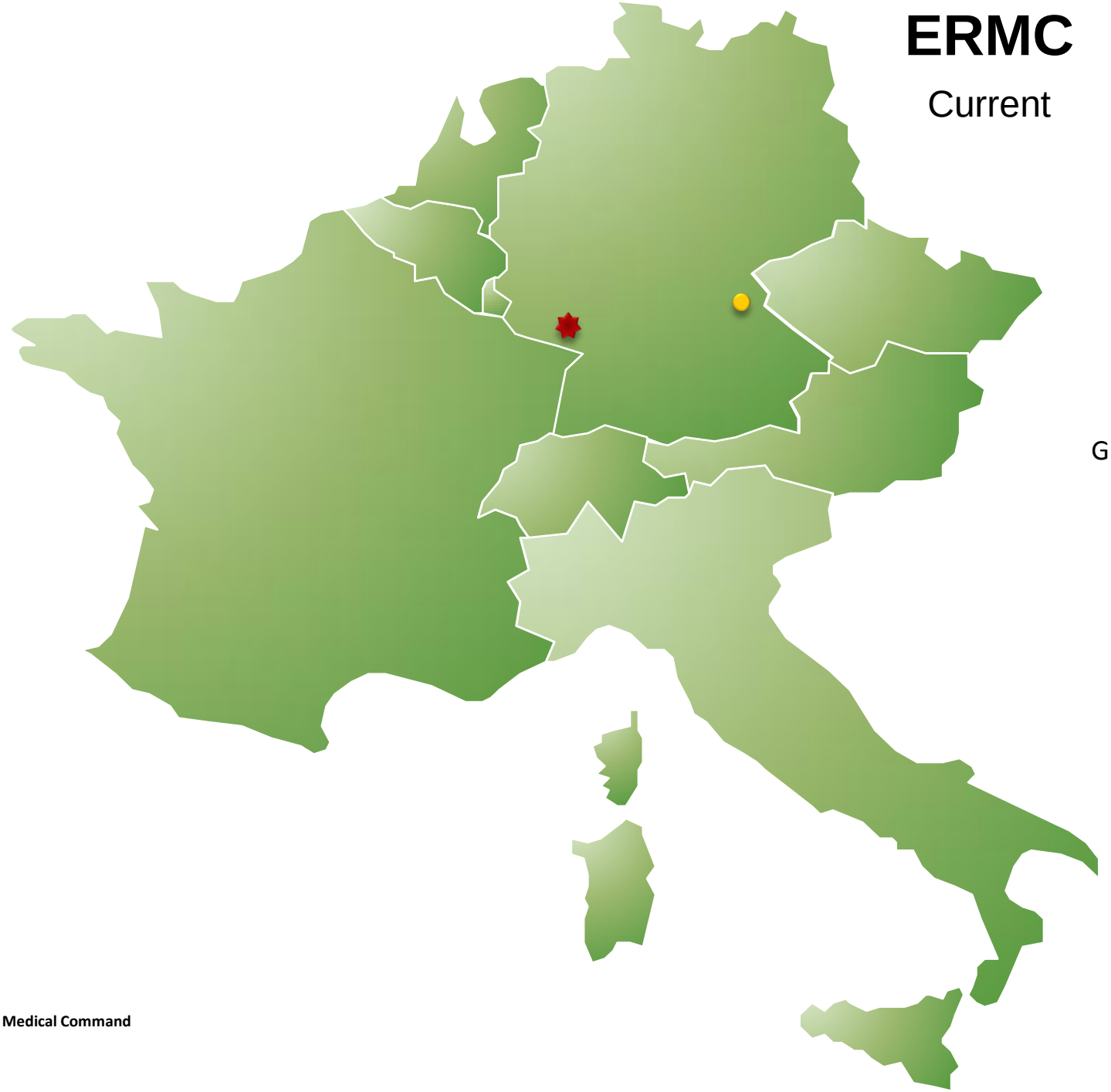
TBI / Concussion

Regional Medical Command

MTF

ERMC

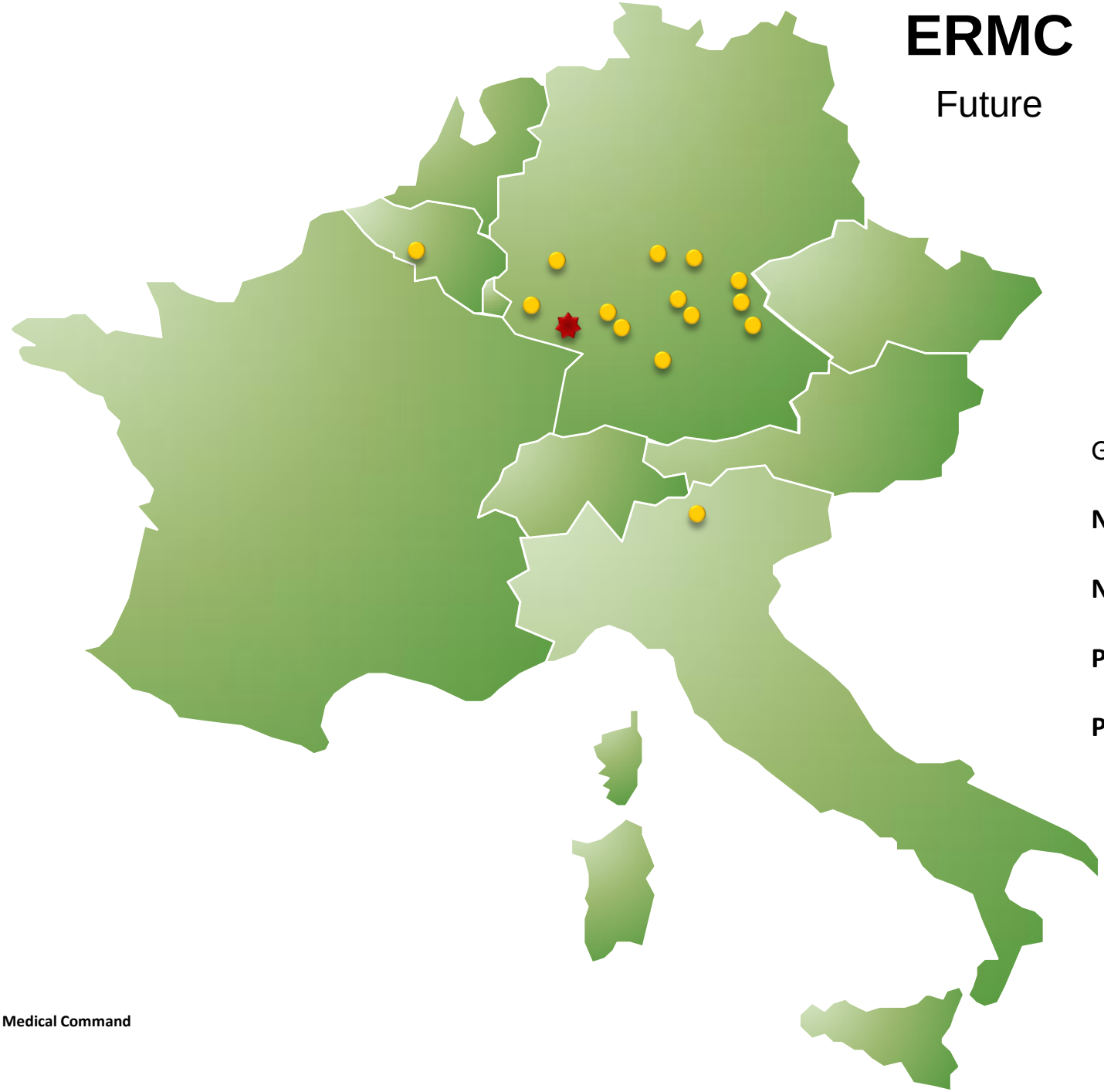
Current



Grand Rounds

ERMC

Future



Grand Rounds

Neurology

Neuropsychology

Psychiatry

Psychology

Regional Medical Command

MTF

Phase I Services - Current

NARMC	SERMC	GPRMC	WRMC	PRMC	ERMC
Grand Rounds	Grand Rounds	Grand Rounds	Grand Rounds	Grand Rounds	Grand Rounds
Headache Clinic	Psychiatry		Internal medicine		
Neurosurgery					
Psychiatry					
Psychology					

Phase II Services - Future

NARMC	SERMC	GPRMC	WRMC	PRMC	ERMC
Grand Rounds	Grand Rounds	Grand Rounds	Grand Rounds	Grand Rounds	Grand Rounds
Headache Clinic	Psychiatry	**Psychology**	Primary Care	**Audiology**	**Neurology**
Neurosurgery	**In-services / Speaker Series**	**Neuropsychology**	**Behavioral Health**	**Occupational Therapy**	**Neuropsychology**
Psychiatry	**Neurology**	**Physical Medicine**	**Behavioral Neurology**	**Psychology**	**Psychiatry**
Psychology	**Neuropsychology**	**Sleep Disorders**	**Clinical Psychology**	**Physical Therapy**	**Psychology**
Neuropsychology	**Psychology (Psychotherapy)**	**Speech & Language**	**Neurology**	**Speech**	
Speech & Language	**Psychology Residency Training**		**Neuropsychology**	**TBI / Concussion**	
	Occupational Therapy		**Neuropsychometry**		
	Physical Therapy		**Occupational Therapy**		
	Social Work				
	Speech TBI (Neurology)				

US Army Wide Tele-TBI Projects
'RMCs Tele-TBI Infrastructure'

- Accomplishments
  - Network established
    - Hired personnel + Installed VTC equipment
  - Conducted site visits
  - Provided training and education
  - Credentialed and privileged providers
  - Conducted Grand rounds
  - Begun conducting telehealth encounters

US Army Wide Tele-RMC TeleHealth
'Ongoing Efforts'

- Funding:
  - FY 09 Phase I = $1.8 M + Phase II = $6.7 M
    Total = $8.5 Million
- Development of outcome metrics
- Development of CPGs/standards
- Seek and integrate clinical proven telemed modalities into our network

US Army Wide Tele-TBI Projects

mCare Project

mCare Project Overview

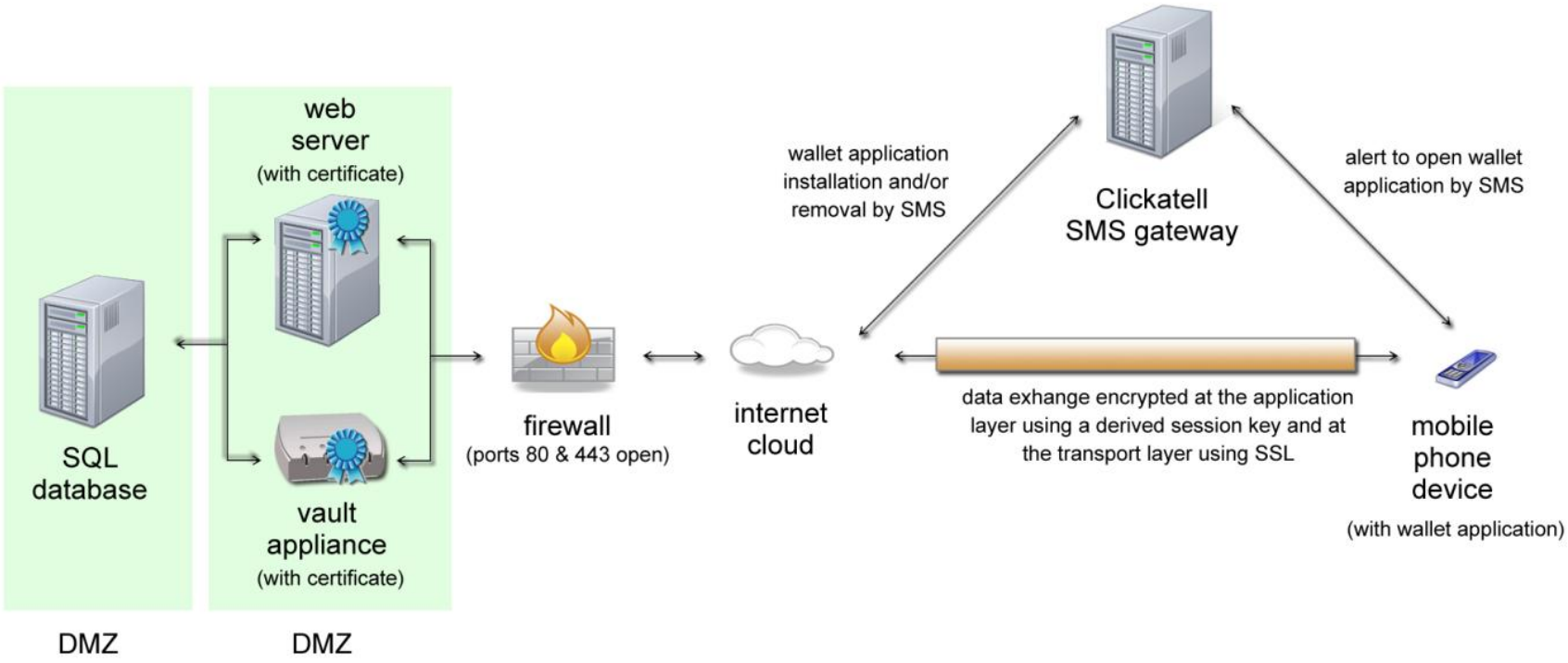
care team enters website and schedules a message

message is sent to the soldier's phone

service member responds to the message

Care team views responses and reports online

mCare Project Infrastructure



mCare Project

Purpose:

- Synchronization over distance of:
  - TBI patients
  - Clinic team members
- Uses patients' EXISTING cell phones
- Secure, message communication
- Simple patient responses

Products:

- Cell Phone messaging technology platform for exchange of data between patients and providers, as well as family members.

Payoff:

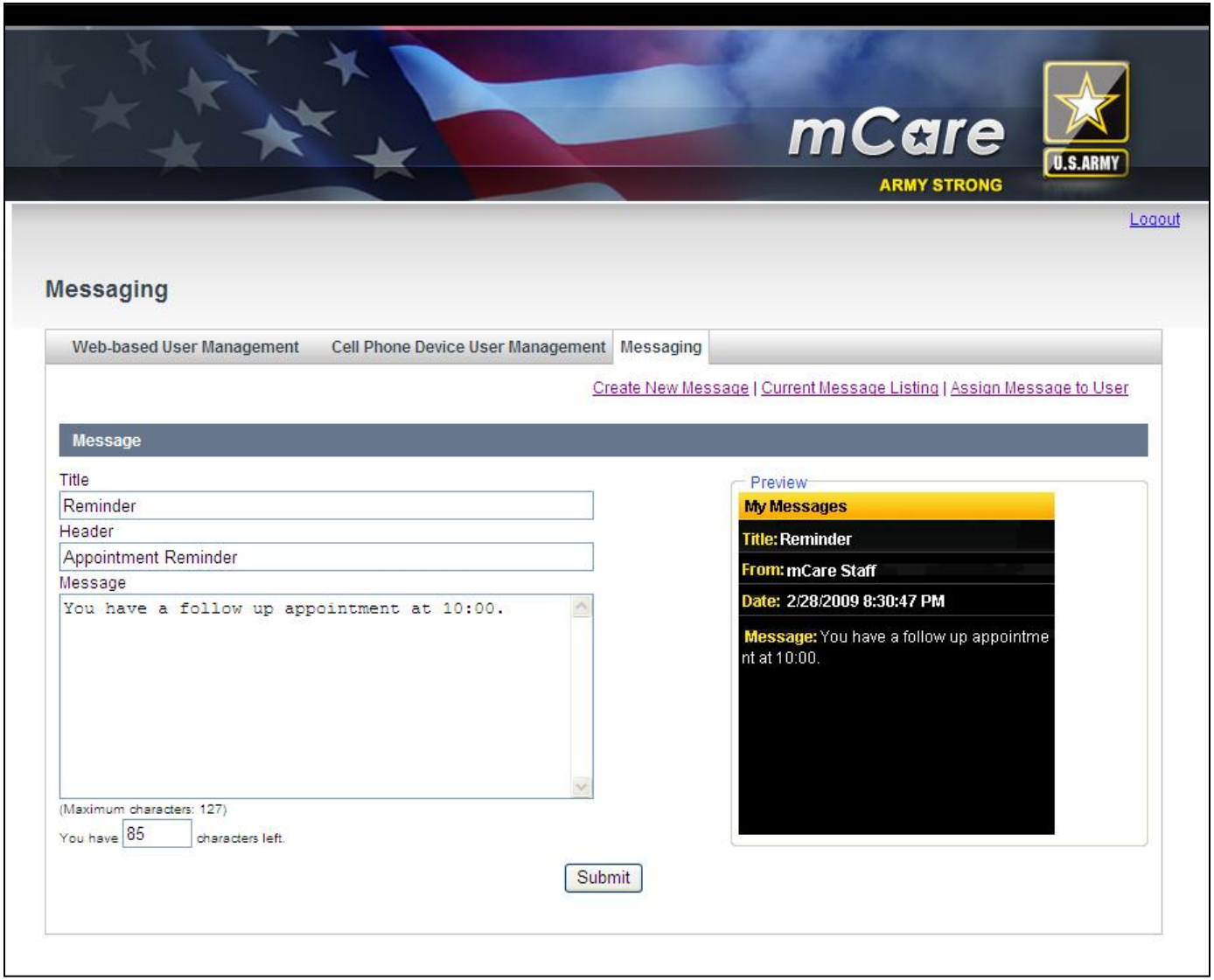
- Meet required Patient/Case Manager/ Platoon Sergeant contact rates
- Evaluate Service Member goal achievement (Comprehensive Transition Plan)
- Triage patient load
- Early assessment of medical issues (Medical Board)
- Final phase to include up to 10,000 service members

Community Based Warrior in Transition Units (CBWTUs)

- mCare Project Liaisons (RNs) are staffed at each study site

Specific Aims

Outcomes	Objective	Measurement	Expected Benefit
Administrative	Increasing contract rates	Contact rates assessment btw SM, CM and PS	Improvement contact rates
	Satisfaction with CM Care	Management Quality Assessment	Increased communication = increased satisfaction
	Appointment attendance rates	Rates of verified appointment attendance	Decreased no-show rates
Clinical *	Well-being/ Neurobehavioral	General Well-Being Schedule Neurobehavioral symptom Inventory	Evaluation of current symptoms
	Goal awareness	Comprehensive Transition Plan assessment	Accurate goal awareness
Technological	System performance	System analysis	Prioritization of features required
	System utilization – Service Member	System analysis	System is functional and reliable
	System utilization – Case Manager/Platoon Sergeant	System analysis	System is functional and reliable
System-based	User Satisfaction – Service Member	Focus group evaluation QUIS technology assessment	Acceptability of system
	User Satisfaction – Case Manager/Platoon Sergeant	Focus group evaluation QUIS technology assessment	Acceptability of system


mCare
ARMY STRONG
U.S.ARMY
Logout
Messaging
Web-based User Management
Cell Phone Device User Management
Messaging
Create New Message | Current Message Listing | Assign Message to User
Message
Title
Reminder
Header
Appointment Reminder
Message
You have a follow up appointment at 10:00.
(Maximum characters: 127)
You have 85 characters left.
Submit
Preview
My Messages
Title: Reminder
From: mCare Staff
Date: 2/28/2009 8:30:47 PM
Message: You have a follow up appointment at 10:00.

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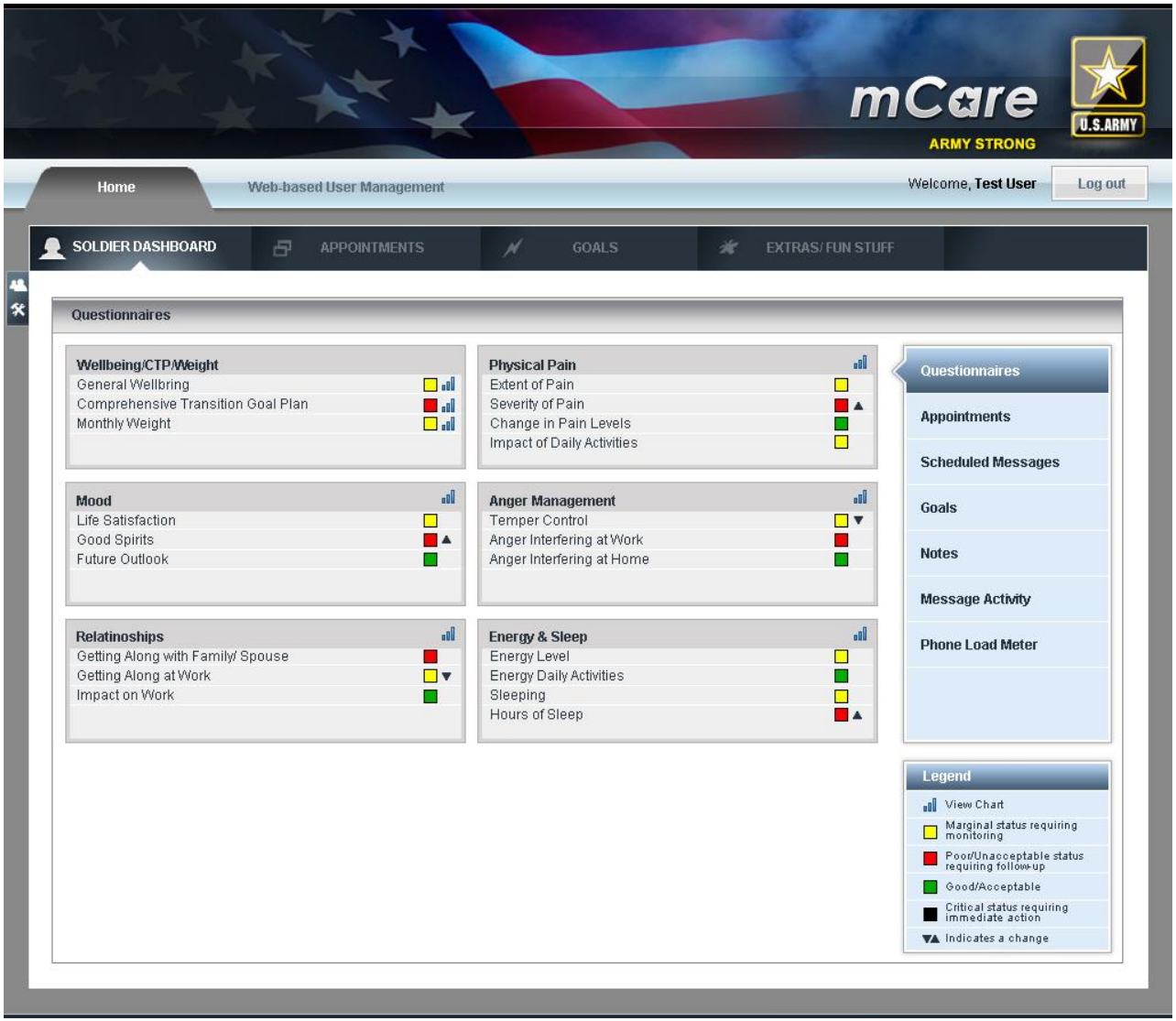
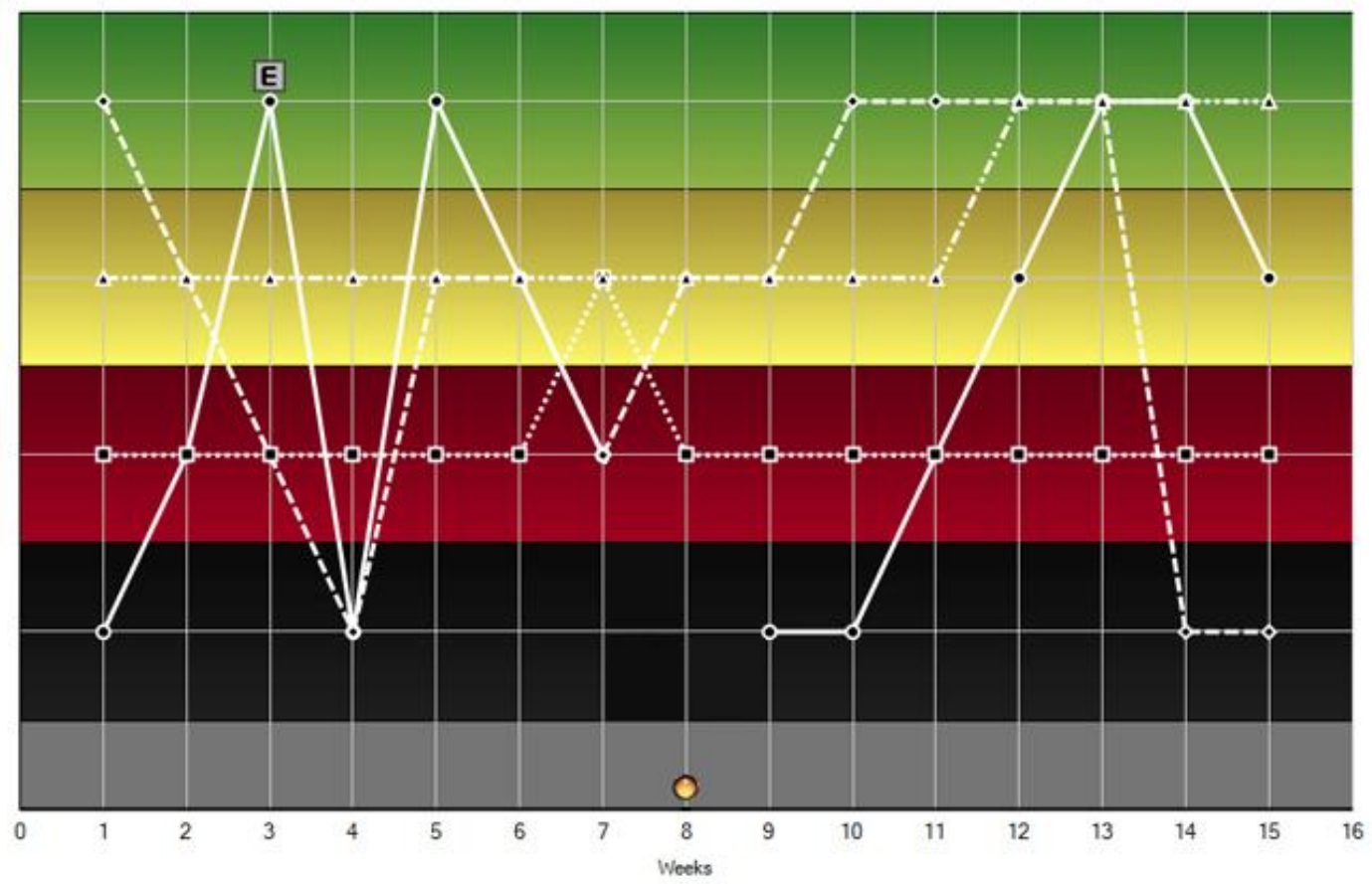

mCare
ARMY STRONG
U.S.ARMY
Home
Web-based User Management
Welcome, Test User
Log out
SOLDIER DASHBOARD
APPOINTMENTS
GOALS
EXTRAS/ FUN STUFF
Questionnaires
Wellbeing/CTP/Weight
General Wellbring
Comprehensive Transition Goal Plan
Monthly Weight
Physical Pain
Extent of Pain
Severity of Pain
Change in Pain Levels
Impact of Daily Activities
Mood
Life Satisfaction
Good Spirits
Future Outlook
Anger Management
Temper Control
Anger Interfering at Work
Anger Interfering at Home
Relatinoships
Getting Along with Family/ Spouse
Getting Along at Work
Impact on Work
Energy & Sleep
Energy Level
Energy Daily Activities
Sleeping
Hours of Sleep
Questionnaires
Appointments
Scheduled Messages
Goals
Notes
Message Activity
Phone Load Meter
Legend
View Chart
Marginal status requiring monitoring
Poor/Unacceptable status requiring follow-up
Good/Acceptable
Critical status requiring immediate action
Indicates a change

Sleep and Energy Levels



US Army Wide Tele-TBI Projects ‘Transcranial Doppler’

AMEDD Transcranial Doppler (TCD) Program

Alexander Vo, PhD
IPA/COR
TATRC/MRMC

AMEDD Transcranial Doppler Program

Needs Addressed

Over the past 5 years, approximately 30% of severe wartime TBI patients experienced cerebral ischemia as a results of the secondary compromise from blast-induced cerebral vasospasm.

Program Description

Transcranial Doppler (TCD) is a non-invasive technique using brain ultrasound to assess and monitor cerebral vascular activities in order to prevent patients from suffering further ischemic injuries to the brain.

Utilizing a Central Laboratory, the service provides:

- TCD testing, monitoring, and interpretation
- Onsite technical support and 24x7x365 helpdesk
- Training and certification

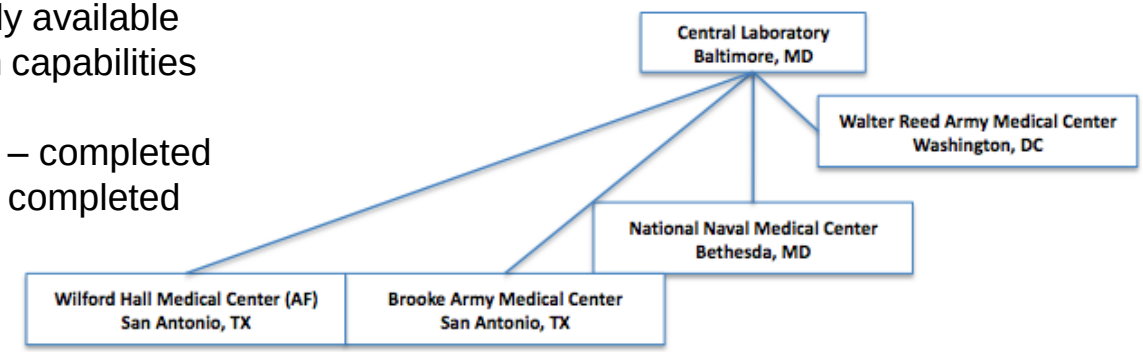
Benefits

- Provides accurate blood flow velocity information for disease severity
- Can be used to follow disease progression, therapeutic endovascular or surgical revascularization, and recovery periods
- Low-cost and non-invasive

AMEDD Transcranial Doppler Program

Capabilities Extended

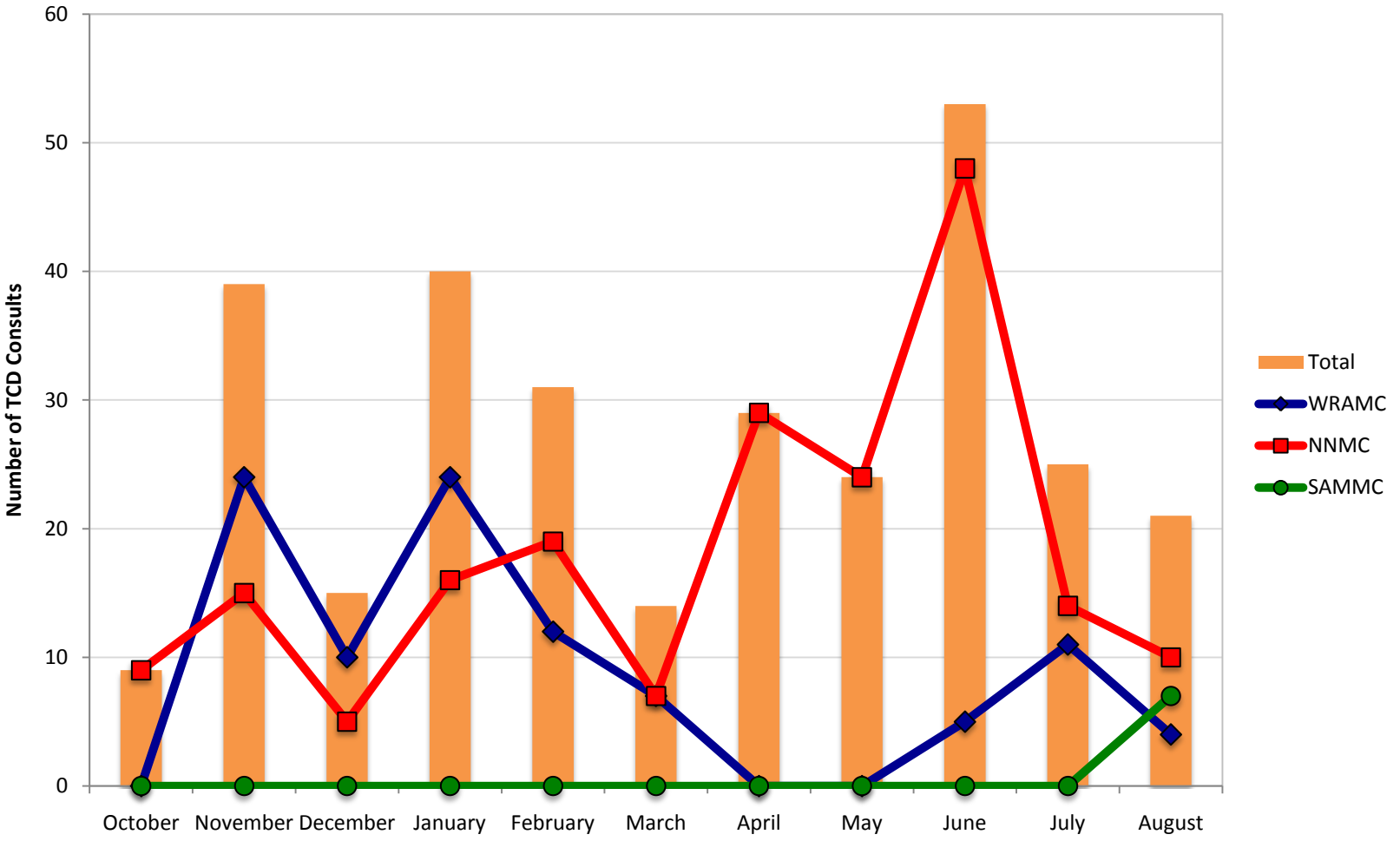
- Service provided where not previously available
- Tri-service approach using telehealth capabilities
- Implementation:
  - Phase 1: WRAMC and NNMC – completed
  - Phase 2: BAMC/Wilford Hall – completed



Impact and Utilization

300 TCD studies have been conducted and preliminary quality review data have indicated that the service have contributed to the pharmacological management of 72% of the patients studied, and have indicated and led to further diagnostic procedures in 18% of the patients, without which they would not have gotten further diagnostic testing. This clearly demonstrates the program's utility and impact on the management of neurotrauma.

TCD Utilization



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Questions?